


CASE STUDY - Driving

TASK TITLE: Driving

Task Description:	<p>Driving may be involved when operating commercial vehicles (automobiles, trucks, and vans), industrial equipment (paving equipment, backhoes, riding lawnmowers and graders) and recreational vehicles (snowmobiles and quads).</p> <p>Typical jobs in which driving is performed include (not necessarily limited to):</p> <ul style="list-style-type: none">• road maintenance and repair• lawn maintenance• trenching• base surveillance
Job Performance Measures Most Often Impacted by Driving:	No formal process has been established to measure quality driving performance.
Typical Employee Comments about Driving:	Employees typically complain about discomfort and/or stiffness in the back and legs/feet.
Suggested Level II Analysis:	Postural Analysis

Shoulder/Neck

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
1. Reaching	<ul style="list-style-type: none"> Controls levers within cab too far away 	38. Move closer to the work location <ul style="list-style-type: none"> move seat forward add backrest pad if seat cannot be moved forward 	✓ ✓		low low	low med	low med
2. Arm forces: Repeated contraction of the muscles of the arm or holding/carrying materials	<ul style="list-style-type: none"> Pulling levers is difficult due to poor control lever maintenance Pulling levers is difficult due to poor control lever design Turning steering wheel is difficult due to steering wheel design if not power steering wheel (see Figure 1.1)  <p>Figure 1.1</p>	101. Provide controls which do not require excessive forces <ul style="list-style-type: none"> contact supplier to investigate adjustable levers and smoother traveling levers 106. Provide powered assistance for a manual activity <ul style="list-style-type: none"> steering wheel contact supplier to investigate power steering 		✓ ✓	high high	med med	med med

Shoulder/Neck (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
3. High speed, sudden shoulder movements	<ul style="list-style-type: none"> Rarely occurs 	N/A					
4. Head/neck bent or twisted	<ul style="list-style-type: none"> Work location positioned behind operator when in backhoe, grader or forklift 	20. Incorporate rest pauses	✓		low	med	med
		84. Provide an adjustable mirror	✓		low	med	med


Hand/Wrist/Arm

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
5. Bent wrists/repeated wrist movements or repeated forearm rotation	<ul style="list-style-type: none"> Control lever location too high (back hoe, grader or forklift) 	123. Raise the person <ul style="list-style-type: none"> adjust seat higher, if possible provide seat cushion 	✓ ✓		low low	low low	low low
6. Repeated manipulations with fingers	<ul style="list-style-type: none"> Rarely occurs 	N/A					
7. Hyper-extension of finger/thumb or repeated single finger activation	<ul style="list-style-type: none"> Rarely occurs 	N/A					
8. Hand/grip forces	<ul style="list-style-type: none"> Rarely occurs 	N/A					
9. High speed hand/wrist/arm movements or vibration, impact, or torque to the hand	<ul style="list-style-type: none"> Control levers or steering wheel emit excessive vibration. 	101. Provide controls which do not require excessive forces <ul style="list-style-type: none"> Maintain equipment provide levers or steering wheel that have vibration dampening materials 	✓	✓	low high	low low	low low

Hand/Wrist/Arm (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
10. Exposure to hard edges	<ul style="list-style-type: none"> Rarely occurs 	N/A					
11. Hands and fingers exposed to cold temperatures	<ul style="list-style-type: none"> Work area is too cold 	23. Increase room temperature <ul style="list-style-type: none"> turn on heaters in vehicle 	✓		low	low	med
		93. Provide appropriate gloves	✓		low	low	low

Back/Torso

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
12. Repeated forward or sideways bending movements	<ul style="list-style-type: none"> Lever positioned too far away 	38. Move closer to the work location <ul style="list-style-type: none"> move seat forward insert additional back support such as a commercial back rest or cushion 	✓ ✓		low low	low med	low med
	<ul style="list-style-type: none"> Leaning forward in seat (back hoe) (see Figure 1.2)  <p>Figure 1.2</p>	115. Provide support for the lower back <ul style="list-style-type: none"> ensure person sits back in seat to utilize back support adjust back support forward insert additional back support such as a commercial back rest or cushion. 	✓ ✓ ✓		low low low	med med med	med med med
13. Twisting of the lower back	<ul style="list-style-type: none"> Work positioned behind worker when in cab 	84. Provide an adjustable mirror <ul style="list-style-type: none"> allow individual to see behind vehicle 	✓		med	med	med
14. High speed, sudden movements	<ul style="list-style-type: none"> Rarely occurs 	N/A					

Back/Torso (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
15. Static, awkward back postures	<ul style="list-style-type: none"> Leaning forward in chair 	115. Provide support for the lower back <ul style="list-style-type: none"> ensure person sits back in seat to utilize back support adjust back support forward insert additional back support such as a commercial back rest or cushion. provide an appropriate chair 	✓		low	low	med
			✓	✓	low med	low low	med med
				✓	med	med	med
16. Lifting forces	<ul style="list-style-type: none"> Rarely occurs 	N/A					
17. Pushing or pulling	<ul style="list-style-type: none"> Rarely occurs 	N/A					
18. Whole body vibration	<ul style="list-style-type: none"> Poor design and maintenance of seat and mounting may increases vibration exposure 	87. Provide an appropriate chair/stool <ul style="list-style-type: none"> seating should incorporate vibration absorption qualities in base support of the seat either air or mechanical maintain equipment 	✓		med	med	med
			✓		med	low	low

Legs/Feet

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
19. Fixed position, standing	<ul style="list-style-type: none"> Rarely occurs 	N/A					
20. Exposure to hard edges on legs, knees, and feet	<ul style="list-style-type: none"> Hard edge of seat digs into under surface of thigh 	64. Provide a padded, compressible surface to sit on <ul style="list-style-type: none"> cut padding and recover seat pan to allow for a waterfall or downward curved edge provide appropriate seating 		✓	med	low	med
				✓	med	low	med
21. Awkward leg postures	<ul style="list-style-type: none"> Foot pedals are positioned too far away 	38. Move closer to the work location <ul style="list-style-type: none"> move seat forward attach blocks/extensions securely to foot pedals 	✓ ✓		low low	low low	low low
22. Standing foot pedal	<ul style="list-style-type: none"> Rarely occurs 	N/A					

Head/Eyes

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
23. Difficult to see/light levels too low/too high	<ul style="list-style-type: none"> Rarely occurs 	N/A					
24. Intensive visual tasks, staring at work objects for long periods	<ul style="list-style-type: none"> Rarely occurs 	N/A					

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